THE EFFECT OF INTEREST RATE AND INFLATION ON GROWTH OF COLLECTIVE INVESTMENT SCHEMES IN KENYA

BY

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DECLARATION

This project is my original work and has not been submitted for any degree in any university.

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This project has been submitted for examination with my approval as the University Supervisor

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DEDICATION

To my late Dad, Henry Okoth Mariga, whose love for education is beyond reach. Who believed so much in education and spent his entire life educating his family and others in society. To, the rest of my family and in particular Judy and Natasha Kimberly who constantly encouraged me to finish this research Project.

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ABBREVIATIONS

CIS:	Collective Investment Schemes
CMA:	Capital Markets Authority
IOSCO:	International Organization of Securities Commissions
OMIS:	Old Mutual Investment Services Kenya
RBA:	The Retirement Benefit Authority
SACCOs:	Savings Credit and Co-operative Organizations

ABSTRACT

The importance Collective Investment Schemes as an investment vehicle today lies in the fact it's the most effective ways of mobilizing savings and investments across the socioeconomic divide especially from small investors who are locked out from other importance investment opportunity. This paper evaluates the effect of interest rate and inflation on growth of collective investment schemes in Kenya for the period 2004 to 2013. The study adopted descriptive research design. The study targeted collective investment schemes registered under asset managers licensed by Capital Market Authority. The data was on total asset growth of the asset managers, interest rate, inflation, GDP growth rate, total funds returns got from CMA and Kenya National Bureau of Statistics. The effect of the independent variables on collective investment schemes' growth was analyzed using multiple linear regression models and Pearson correlation analysis. The study's findings show that positive and significant correlation between total asset growth, and interest rates and inflation rate. Negative and significant correlation between total asset growth and total funds returns. Moderate linear relationship (39.7%) existed between interest rate, inflation rate and total asset growth of the collective investment schemes. It is concluded that interest rates and bonds positively affect collective investment schemes growth since as investors constantly compare the scheme's returns on their current investments to what they could get elsewhere in the market. As market interest and inflation rates change, the schemes' returns becomes more or less attractive to investors, who are therefore willing to pay more or less for them. The study recommended that investors need to invest in diversified funds to ensure high return as different types of funds performed differently, take great care that the profile of the CIS meets their needs and risk profile.

CHAPTER ONE:

INTRODUCTION

1.1 Background to the Study

Collective Investment Schemes (CIS) have been one of the most significant developments in financial intermediation during the past few decades. CIS are pools of funds that are managed on behalf of investors by a professional fund manager following specific guidelines as per investors' objectives (Milesi-Ferretti & Lane, 2010). CIS can be in form of mutual funds, unit trusts, employer share ownership plans and special interest collective investment schemes. According to CIS started in Netherlands in 1822 and in Scotland in 1880. The first American investment trust was the New York Stock Trust, established in 1889. In 1960s there was a phenomenon rise in aggressive growth of funds (with very high risk).

These resulted to billions of dollars invested in mutual funds and over 100 funds were formed in America alone between in 1968 and 1969. The 1970's saw a new kind of innovation: funds with no commission called "no load". The first CIS started in Africa 1965, i.e. more than 100 years after the basic principle was put into practice in Scotland and well after the active beginnings in America in 1924 and in the United Kingdom in 1931 (Rouwenhorst, 2004). Today there are 6,500 unique funds in many countries Kenya included and even thousands more that differ only by their share class. World-wide the unit trust movement has enjoyed wide acceptance from the investing public and concomitant excellent growth in the number of funds and total net assets (Shanmugasundaram & Balakrishnan, 2010).

1.1.1 Interest Rate

Interest rates are often called the cost of money. Actually, they are the price you pay, or someone pays you, to "rent" money for a specified period of time. When you open a savings account, for example, or buy a guaranteed investment certificate (GIC), the financial institution is borrowing your money and paying you rent for its use. It then rents your money to others and makes a profit by charging them a higher rent.

Fluctuation in the rate of interest impacts on demand and supply of collective investment schemes (Kazmi, 2004, Sally, Ekaterina, and Mark, 2003). According to Kimura et al (1997) the interest rates dominate much of economic and business thinking in Kenya. Decline in interest rate leads to revival of economy and increase investment in new venture and hence demand for mutual funds (Kazmi, 2004). According to Gitman Joehnk (1990) Interest rates and returns are determined by yield to maturity, holding period, realized return and paper return. Since information on interest trends is readily available in Kenya, determining the level of interest is less problematic.

1.1.2 Inflation

Inflation is an economy-wide sustained trend of increasing prices from one year to the next. The rate of inflation is important as it represents the rate at which the real value of an investment is eroded and the loss in spending power over time. Inflation also tells investors exactly how much of a return their investments need to make for them to maintain their standard of living. Thus, investors buy investment products with returns that are equal to or greater than inflation (Reilly and Brown, 2011). As an economy grows, businesses and consumers spend more money on goods and services. In the

growth stage of an economic cycle, demand typically outstrips the supply of goods, and producers can raise their prices. As a result, the rate of inflation increases.

Rising commodity prices are the most visible inflationary force because when commodities rise in price, the costs of basic goods and services generally increase. Higher oil prices, in particular, have the most pervasive impact on an economy; prices of all goods and services that are transported to their markets by truck, rail or ship also rise (Abel and Bernanke, 2005). By causing price increases throughout an economy, rising oil prices take money out of the pockets of consumers and businesses. Inflation poses a "stealth" threat to investors as it chips away at real savings and investment returns. Most investors aim to increase their long-term purchasing power. Inflation puts this goal at risk because investment returns must first keep up with the rate of inflation in order to increase real purchasing power (Bernholz, 2003). If investors do not protect their portfolios, inflation can be harmful to fixed income returns, in particular. Many investors buy fixed income securities because they want a stable income stream, which comes in the form of interest, or coupon, payments.

1.1.3 Growth of Collective Investment Schemes

For the purpose of this study growth of CIS relates to the increase in asset value under management of collective investment schemes, the number of investors in the CIS and number of funds management companies. The value of assets and number of investors under a fund management company will be used to measure their size in the industry. The number of the fund management companies will indicate the general growth of the collective investment schemes industry (Abel and Bernanke, 2005).

According to Bodie *et al* (2002), the valuation of Investment Company shares (units) is obtained by dividing the total market value of all of the firms' assets less liabilities, by the total number of fund shares outstanding. In the ICI (2004) America's mutual fund investors (91 million people) can choose from 500 fund families offering 8,000 funds to save for their future.

CIS are positioned as an advanced investment to small savers which offers a diversified asset portfolio for investors, who, may participate as individuals or jointly. The joint investment entities include merry-go-rounds, investment clubs and medium businesses. In this respect, medium businesses would purchase CIS products and distribute returns to members as dividends or retained earnings (Aryeetey, 2004).

Economic actors in the context of investment in CIS include individuals, households, groups, enterprises and institutions. Investment as an alternative to consumption consist of a voluntary aspect subject to the economic actor's decision, and an involuntary aspect, subject to external factors such as inflation, taxes and the social security system. Successful mobilization of institutional funds can, therefore, only be ensured by the existence of demand-driven savings products offered by appropriate institutional structures. A broader understanding of the savings decisions of poor households has shown that appropriate supply can attract significant volumes of savings. Furthermore, a much larger number of clients can be reached through funds mobilization than through credit-granting (Collins, 1991).

1.1.4 Interest Rate, Inflation and Collective Investment Scheme Growth

Trends in interest rate and decision by investors are key factors influencing the growth and development of CIS industry in Kenya. This is because interest rates influence economic growth, investment decisions and business thinking of investors. Decline in interest rate leads to revival of economy and increase investment in new venture and hence demand for mutual funds (Kazmi, 2004).

On the other hand, an increase in the rate of interest increases the cost of borrowing slowing down investment thereby reducing growth of CIS industry. Investor decisions have direct influence on the growth of CIS industry because as the number of CIS investors increase so is the size of the industry.

1.1.5 Collective Investment Schemes in Kenya

Kenyan financial markets continue to deepen, and the need for professionally managed unit trust products continues to grow especially with the increase of passive investors. In Kenya the CIS came into being after the study of 1994 by CMA resulting to CIS regulation 2001. Unit trust funds in Kenya are generally of two major categories; the income funds and the growth funds. Income funds are those that provide a consistent inflow of earnings to the investor, either monthly, quarterly, semi-annually or annually. Growth funds, on the other hand, do not provide quick gains but only give long-term capital appreciation. Ordinarily, unit trusts offer alternative options for investors looking to diversify from a volatile stock market and who have limited capital to acquire higher volumes for greater returns (Kibocha, 2011 and Mugwe, 2013).

The rise of Collective CIS in Kenya has been rather slow and currently there are only 16 unit trusts service providers in the Kenyan market with 60 UTS products licensed and available in the market (Nairobi Stock Exchange, 2004).The value of assets under management by unit trust firms in Kenya rose by 24% last year boosted by share price gains at the Nairobi Securities Exchange (NSE).

Survey has shown that total assets of collective investment schemes rose by 24% to Sh29 billion ($337.5 million) in 2012 from Sh23.4 billion ($276 million) the previous year. It is believed that as interest rate continues to stabilize and increasing public knowledge about collective investment schemes could impact positively on the growth of CIS industry in Kenya. The decision by Kenyans to invest in CIS will to allow them to benefit from low risk and above average return on investments through economies of scale that come with a pooling of investments while stable rates of interest will reduce uncertainty in financial markets.

1.2 Research Problem

The popularity of Collective Investment Schemes as an investment vehicle today lies in the fact that an individual investor can satisfy his investment needs through a value chain that has a dynamic interdependence and that ensures value added for the individual investor. It is the most effective ways of mobilizing savings and investments particularly from small investors. Thus owing to their critical role as an investment vehicle for small savers it is important to assess how macroeconomic aggregates such as interest rates and inflation affect their growth.

Collective investment schemes in Kenya have grown by an average of Kshs1.9 billion annually to Kshs17.6 billion between 2001 and 2013, much slower than other financial sector investments such as pensions funds (Mugwe, 2013). Unit trusts in Kenya are still not yet fully developed and the knowledge and operations of unit trust funds are still at their infancy stages given that it enabling regulation was introduced in 2001 (Lamuno, 2009). The growth of collective investment schemes in Kenya is affected by among other factors the trends in interest rates and the types of decisions made by investors. There is virtually no study analysing these problems in this nascent industry. This was my motivation to make contributions in the industry, which if taken seriously, would help Kenyans invest for their future. There exist problems of how to promote growth of unit trust fund business in Kenya today despite high CIS growth potential in the country.

The available literature (Joshi 2004; Cui, Jong, & Ponds, 2011; Mwangi, 2003; Kazmi, 2004, Sally, Ekaterina, and Mark, 2003; Kimura et al, 1997; Reilly and Brown, 2011; Shanmugasundaram & Balakrishnan, 2010; Cui, Jong & Ponds, 2011; Bovenberg, Koijen, Nijman, & Teulings, 2007; Kipkoech 2012; Waweru & Uliana, 2008; Kagunga, 2010; Waweru & Uliana, 2008) have not looked into this specific area of slow growth and development of CIS in Kenya. The studies available have not directly studied the impact of interest rate and investment decision on the growth and development of CIS. This is evident from the studies that have been quoted above which leaves empirical a gap on how interest rates and investor decision affect growth and development of the CIS that needs to be filled.

This study therefore sought to address this gap by answering important questions. How do trends on interest rates affect the growth of CIS in Kenya? What is the effect of inflation on the growth of CIS?

1.3 Research Objective

To establish the effect of interest rates and inflation on the growth of collective investment schemes in Kenya.

1.4 Value of the Study

As the regulatory body of the capital markets in Kenya, Capital Market Authority (CMA) is charged with the development of new instruments and regulation of such instruments as CIS. This research highlights how interest rates and inflation affect the growth of the CIS and covered issues in the regulatory and legislative framework of the CIS, which contradict existing legislative framework or may be inadequate. To the Nairobi Stock Exchange, the study might boost activity in the market. This would be as a result of increased trading and investment in unit trusts by savers. The Retirement Benefit Authority (RBA) might benefit through efficient structure for investment of pension funds especially for individuals and small pension fund. This is because the CIS investment criteria are similar to pension fund investment ones. The government might benefit as the finding and recommendations is geared towards promoting saving and investment in the country.

Understanding the growth of collective investment schemes and its determinants is of immense benefit to the investors, current and prospective. This is because improving investor information enhances their ability to make well informed investment choices.

Thus, if more and more investors make better choices market would allocate funds to the best investment and enabling the primary purpose of investment advisors in the portfolio selection. Future promoters and fund managers of CIS might benefit from the study in that it has reference to ways to attain rapid growth the investment schemes.

The pursuit of knowledge is a major human endeavour, information in the relationships helps to improve the existing academic body of knowledge on the growth of CIS. Exploration into an area of study helps scholars better understand the topic. The study is useful to other researchers and academician who may undertake a similar study and it will be a reference point.

CHAPTER TWO:

LITERATURE REVIEW

2.1 Introduction

This chapter discusses the relevant literature on interest rates, inflation and growth of collective investment schemes. It is structured into the relevant theories, determinants of CIS growth, empirical studies and summary of the literature.

2.2 Theoretical Review

This section looks at the theories that anchored on interest rate and inflation, and underpins how the two related with the growth of collective investment scheme. These theories are: classical theory of rate of interest and prospect theory.

2.2.1 Classical Theory of Rate of Interest

Classical theory regards the rate of interest as the factor which determines the demand for investment and savings. Investment represents the demand for investable resources and saving represents the supply, whilst the rate of interest is the "price" of investable resources at which the two are equated. Just as the price of a commodity is necessarily fixed at that point where the demand for it is equal to the supply, so the rate of interest necessarily comes to rest under the play of market forces at the point where the amount of investment at that rate of interest is equal to the amount of saving at that rate (Derek and Sheffrin, 2003).

Accordingly, savings automatically brings down the rate of interest, and automatically stimulates the output of capital, and the fall in the rate of interest stimulate the output of

capital to an extent which is equal to the increment of saving; and, this is a self-regulatory process of adjustment which takes place without the necessity for any special intervention on the part of the monetary authority. Therefore, a decline in the rate of interest as a result of savings will stimulate investment and the growth of CIS industry in Kenya (Blaug, 1987).

2.2.2 Prospect Theory

Expected utility theory is widely used in looking at decision making under risk (Kahneman & Tversky, 1979). This framework has generally been accepted as a normative model of rational choice, and is widely applied as a descriptive model of economic behavior. Kahneman and Tversky (1979) describe several cases in which preferences systematically violate the axioms of expected utility theory, and argue that utility theory is not an adequate descriptive model. Kahneman and Tversky (1979) and Tversky and Kahneman (1986) argue that people treat expected gains and losses differently, in contrast to expected utility theory. In particular, people overweight prospective losses and underweight equivalent gains (Attanasio & Banks, 2001). The predictive power of prospect theory in explaining saving "puzzles" is now a significant area for empirical investigation.

Kahneman and Tversky (1979) demonstrate several phenomena which violate the basic tenets of expected utility theory using the responses of students and university faculty to hypothetical choice problems. The problems described are selected illustrations of a series of effects, each of which has been observed in several problems with different outcomes and probabilities. The reliance on hypothetical choices raises questions

regarding the validity of the method and generalizability of the results. However, all other methods that have been used to test utility theory also suffer from critical disadvantages.

2.3 Determinants of Growth of Collective Investment Schemes

This sections looks at the determinants of collective investment schemes growth that is of interest to the study. This include: interest rates, inflation, economic growth and total funds returns.

2.3.1 Interest Rates

Investment is inversely related to interest rates, which are the cost of borrowing and the reward to lending. Investment is inversely related to interest rates for two main reasons. Firstly, if interest rates rise, the opportunity cost of investment rises. A rise in interest rates increases the return on funds deposited in an interest-bearing account, or from making a loan, which reduces the attractiveness of investment relative to lending. Hence, investment decisions may be postponed until interest rates return to lower levels. Secondly, if interest rates rise, firms may anticipate that consumers will reduce their spending, and the benefit of investing will be lost. Investing to expand requires that consumers at least maintain their current spending. Therefore, a predicted fall is likely to discourage firms from investing and force them to postpone their investment decisions

Interest rates fluctuation affects the demand and supply of collective investment schemes (Kazmi, 2004). That means they need to hedge against the fluctuation, which make the investors withdraw hence slow the growth of mutual funds. According to Kimura *et al* (1997) the interest rates dominate much of economic and business thinking in Kenya.

Decline in interest rate leads to revival of economy and increased investment in new venture. The result is demand for mutual funds (Kazmi, 2004).

Although the scenario may have changed in terms of single digits Treasury bills trend has changed within 2 years from upward to downward, and currently reverting to upward trend. According to GitmanJoehnk (1990) Interest rates and returns are determined by yield to maturity, holding period, realized return and paper return. Holding period refer to the relevant time over which one wishes to measure return (interest) on investment vehicle. Realized return relates to return received by investor during the period. Paper return has to do with capital gain return that has been achieved, but not yet realized from the sale of investment vehicle.

2.3.2 Inflation

The impact of inflation on investment portfolio depends on the type of securities one hold. Over the long run, a company's revenue and earnings should increase at the same pace as inflation. The exception to this is stagflation. The combination of a bad economy with an increase in costs is bad for stocks (Gitman and Joehnk, 1990). Also, a company is in the same situation as a normal consumer - the more cash it carries, the more its purchasing power decreases with increases in inflation. The main problem with stocks and inflation is that a company's returns tend to be overstated (Cui, Jong and Ponds, 2011).

In times of high inflation, a company may look like it's prospering, when really inflation is the reason behind the growth. Understanding inflation is crucial to investing because inflation can reduce the value of investment returns. Inflation affects all aspects of the

economy, from consumer spending, business investment and employment rates to government programs, tax policies, and interest rates (Bovenberg, Koijen, Nijman and Teulings, 2007).

As an economy grows, businesses and consumers spend more money on goods and services. In the growth stage of an economic cycle, demand typically outstrips the supply of goods, and producers can raise their prices. As a result, the rate of inflation increases. If economic growth accelerates very rapidly, demand grows even faster and producers raise prices continually. An upward price spiral, sometimes called "runaway inflation" or "hyperinflation," can result (Rouwenhorst, 2004).

2.3.3 Economic Growth

Changes in national income create an accelerator effect. Economic theory suggests that, at the macro-economic level, small changes in national income can trigger much larger changes in investment levels (Cui, Jong and Ponds, 2011). Because investment is a high-risk activity, general expectations about the future will influence a firm's investment appraisal and eventual decision-making. Any indication of a downturn in the economy, a possible change of government, war or a rise in oil or other commodity prices may reduce the expected benefit or increase the expected cost of investment. Small changes in household income and spending can trigger much larger changes in investment. This is because firms often expect new sales and orders to be sustained into the long run, and purchase larger quantities of capital goods than they need in the short run (Hofmann, Hoelzl and Kirchler, 2008).

There is need for the regulators to harmonize the requirements especially the investment guidelines. These will enable the life fund managers to invest in collective investment scheme that has followed the capital market regulation without having to go through the commissioner of insurance. The fund manager should also be able to invest in collective investment scheme without having to go through the Retirement benefit Authority but just providing the information (Kibocha, 2011).

2.3.4 Total Funds Returns

Investment is a sacrifice, which involves taking risks. This means that businesses, entrepreneurs, and capital owners will require a return on their investment in order to cover this risk, and earn a reward. In terms of the whole economy, the amount of business profits is a good indication of the potential reward for investment (Rouwenhorst, 2004). When prices rise these consumers cannot buy as much as they could previously. This discourages savings due to the fact that the money is worth more presently than in the future. This expectation reduces economic growth because the economy needs a certain level of savings to finance investments which boosts economic growth. Also, inflation makes it harder for businesses to plan for the future. It is very difficult to decide how much to produce, because businesses cannot predict the demand for their product at the higher prices they will have to charge in order to cover their costs (Kibocha, 2011).

An investor has three objectives while investing his money, namely safety of invested money, liquidity position of invested money and return on investment. The return on investment may further be divided into capital gain and the rate of return on investment as interest or dividend. Among securities unit trusts are considered the most challenging

as well as rewarding. Securities include shares, debentures, derivatives, units of mutual funds, Government securities (Reilly and Brown, 2011).

2.4 Empirical Studies

There are a number of empirical studies related to factors affecting growth of CIS industry. Bovenberg, Koijen, Nijman and Teulings (2007) surveyed academic literature on optimal saving and investment over an individual's life cycle. They began out with a simple benchmark model with separable and smooth preferences, one aggregate risk factor and riskless wage income. Within this simple setting, optimal saving and investment behavior were explored from the perspective of individuals. Subsequently, they investigated various constraints to optimal individual decision making and discussed how collective pension schemes may help to relieve some of the market incompleteness that arises from these constraints while at the same time introducing new types of constraints. Finally, various extensions to the benchmark setting were analyzed: a more elaborate modelling of human capital, additional risk factors, and other types of preferences. As market demand for socially responsible investment is increasing, suggest that investment decisions are influenced by both financial and moral considerations.

Hofmann, Hoelzl, and Kirchler (2008) tested the suitability of (a) multiple attribute utility theory (MAUT), (b) theory of planned behavior, and (c) issue-contingent model of ethical decision making in organizations. In an experimental setting, 141 participants traded company shares in a computerized asset market. Over 12 periods, companies varied in morality (i.e., treatment of employees) and in profitability (i.e., expected dividends per share). Participants' bids and asks for shares were recorded. Results indicate that moral

considerations influence investment decisions, controlling for profit. Differences between the three models are discussed.

Cui, Jong and Ponds (2011) sought to assess whether or not intergenerational risk sharing desirable and feasible in funded pension schemes. Using a multi-period OLG model, they investigated risk sharing between generations for a variety of realistic collective funded pension schemes, where pension benefits and contributions may depend on the funding ratio and the asset returns. They found that well-structured intergenerational risk sharing via collective schemes can be welfare-enhancing *vis-à-vis* the optimal individual benchmark. Moreover, from an *ex ante* perspective the expected welfare gain of the current entry cohort is not at the cost of the older and future cohorts.

Kipkoech (2012) study sought to investigate the factors influencing the growth of individual pension schemes in Kenya. More specifically, the study explored the effect of fund governance, regulations, and investment strategy and fund ethics on the growth of pension schemes. The study adopted the descriptive research design. The target population for this study comprised of 22 individual pension schemes in Kenya. The findings revealed that fund governance exert a significant relationship on the growth of the pension schemes. The result further showed that reducing the benefits processing period, providing relevant education to the trustees, maintaining an appropriate internal control system, communicating regularly with members, defining the roles of the trustees clearly, regulating the fees charged by the service providers, controlling default risk on the part of the sponsor and implementing investment strategies that are major factors that influence the growth of individual pension schemes in Kenya. Fund regulation was also found to exert a significant relationship on the growth of individual pension schemes.

In his comparative study, Kagunga (2010) investigated whether unit trusts in Kenya have better performance compared to that of market portfolio, given their systematic risk. The population of study consisted of all the Unit Trusts in Kenya. The Nairobi 20 share index was used in estimating the performance of a market portfolio. Data on net asset value and dividend paid by unit trusts was collected from offices of respective unit trusts schemes. Data on estimate of dividend received on the market portfolio, and the 20 share index was collected from the Nairobi Stock Exchange. Data on market interest rates, interbank lending rates and free rates was collected from the Central Bank of Kenya. Results showed that even though unit trust recorded a better performance than the stock market, the results were not statistically significant. Regression tests confirmed the relationship between unit trust return and that of the market have a strong relationship.

Kibocha (2011) did a study on the challenges to funds mobilization by unit trusts in Kenya. She looked at the effects of innovation, interest rates and business environment on funds mobilization by unit trusts by sampling 16 registered unit trusts and fund managers based in Nairobi. The study found that the amount of income, innovation, interest rates and favorable conditions, general economic trends, political stability, stability of the institution, market trends, interest rates charged and advancement of technology influenced funds mobilization by unit trusts in that order of reducing importance. This study recommended that the unit trusts in Kenya should carry out investor education, on the need and benefits of saving.

Kimani (2012) did a study on the impact of collective investment schemes on financial inclusion in Kenya. The study was a census of all the 11 collective schemes. The study established that there was low access to financial products in the collective investment

schemes. It established several factors that affect financial inclusion such as age of the investor, gender, level of education and level of income. Buster (2012) did a study on the relationship between asset allocation and financial performance of mutual funds in Kenya. The study found out that there was a difference between the performance of unit trusts and the stock market portfolio. Unit trusts are attractive mainly because of the minimum risk involved as well as mutual funds are professionally managed. These funds are invested in shares, bonds and real estates. It established that given the desire of investors to seek out diversification in their asset portfolios and considering the performance of the stock markets, many investors have sought to diversify their holdings further by investing in unit trusts.

2.5 Summary of Literature Review

This section has reviewed the theoretical frameworks guiding growth of collective investment schemes. Classical theory of rate of interest looks at the factor which determines the demand for investment and savings. Prospect theory looks at the decision making under risk. Determinants of the growth are also discussed. This include: interest rates, inflation, economic growth and total funds returns. In the empirical review, it has been evident that capital markets are becoming new opportunities to businesses in the developing countries and Kenya in particular. However, the empirical literature reveals that collective investment schemes are still underutilized. The empirical literature have looked at: factors influencing the growth of individual pension schemes in Kenya; comparative performance of unit trusts verses stock market portfolio, given their systematic risk; challenges to funds mobilization by unit trusts in Kenya; and, impact of

collective investment schemes on financial inclusion in Kenya. Thus, these studies did not directly study the impact of interest rate and inflation on the growth of CIS. This leaves knowledge gap that needed to be filled.

CHAPTER THREE:

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methods and procedures that were followed in conducting research. The chapter is structured into research design, study population, data collection and data analysis.

3.2 Research Design

This study adopted descriptive research design. Descriptive research describes data and characteristics about the population or phenomena studied. Descriptive research answers the questions who, what, where, when and how (Mugenda and Mugenda, 2003). It is appropriate where the target group explain and describe certain issues about variables of the study to support matters under investigation. It was useful in effect of interest rate and inflation on the growth of collective investment scheme.

3.3 Data Collection

From the conceptual framework, the study had six independent variables and one dependent variable. The dependent variable was asset growth. Data on the independent variables was collected on the 16 asset managers' performance and macroeconomic data from Kenya National Bureau of Statistics (KNBS) (Appendix II). The data collection covered a ten year period of 2004 to 2013. It is always a regulatory requirement for asset managers to report their performance with CMA. Therefore, data about the dependent and independent variables was collected from the CMA using secondary data collection

guide/form. The secondary data collected was total asset growth, interest rate, inflation, GDP growth rate, total funds returns. All these were collected using secondary data.

3.4 Data Analysis

Data was collected using document analysis and questionnaire. The data was analyzed and presented qualitatively and quantitatively. Data collected was coded, tabulated and presented according to each independent and dependent variable. Descriptive analysis was conducted on data. Descriptive statistics was used in the secondary data as a preliminary analysis and to summarize the data obtained. This included: mean, standard deviation, minimum and maximum values and quartile values. Other measures of distribution were used. Inferential statistics were conducted using multiple linear regression model to analyze the data.

3.4.1 Regression Model

From the regression model, the dependent variable was total asset growth which measured CIS growth, while the independent variables were interest rate, inflation, GDP growth rate, total funds returns.

$$Y = ß_0 + ß_1X_1 + ß_2X_2 + ß_3X_3 + ß_4X_4 + \varepsilon$$

Where Y was total asset growth, $ß_0$ is the regression constant, $ß_1$, $ß_3$, $ß_2$, $ß_3$, $ß_4$ – were regression coefficients or change induced in Y by each X variable, X_1 was the interest rates, X_2 was inflation, X_3 was GDP growth rate, and X_4 was total funds returns, ε was error term.

Table 3.1: Table of Variables

Variable	Description
Y	Total asset growth measured as the ratio of difference between the current and previous year total asset value over the previous year total asset value
X_1	Interest rate measured market deposit interest rate
X_2	Inflation measured as the change or rise in overall price levels of a basket of goods indicated by the consumer price index
X_3	GDP growth rate measured as percentage increase in real GDP
X_4	total funds returns measured as the overall rate of return to the investors funds or capital gain

3.4.2 Tests of Significance

Correlation analysis was used to examine the inter-relationships between the variables in the study. This showed if there are any serial correlations within the independent variables before a regression analysis was carried out. A multiple regression analysis was then performed using the model above. The F-test was used to show the strength of the model. The coefficients were interpreted to show how each of the independent variables affected growth of CIS as measured by growth in total assets. The significance was tested at 5% level.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This section presents an outcome of findings of the research. The research objective was to establish the effect of interest rate and inflation on growth of collective investment schemes. The data was analyzed to generate descriptive statistics as described in this chapter. The data was collected from the 16 fund managers in Kenya. Data collection forms were distributed for this study and only fifteen duly filled.

4.2 Response Rate

The data was collected on all the targeted 16 asset fund managers in Kenya making a reponse rate of 100%. Total asset, interest rate, inflation, GDP growth and total funds returns. The high response rate was based on teh fact that colelctive fund investment scheme in Kenya is highly regulated and the asset fund managers are required report on their transactions with CMA. The data was collected for a 10 year period; 2004 to 2013

4.2 Descriptive Analysis

Table 4.1 gives the summary statistics of the main variables that have been included in the model including: minimum, maximum, mean, standard deviation, skewness and kurtosis. The data analyzed are: total asset growth, interest rate, inflation rate, and total funds returns.

Table 4.2: Descriptive Statistics

Statistics	Total Asset Growth (Y1) in %	Interest Rates (X1) in %	Inflation Rate (X2) in %	Total Funds Return (X3) in %	GDP Growth Rate in %
Mean	3.012	21.122	8.801	9.046	8.474
Standard Deviation	1.268	7.52	2.453	1.397	0.688
Minimum	-3.165	12.0	4.490	1.577	7.198
Maximum	7.211	34.02	11.710	19.134	9.788
Median	3.208	19.05	7.12	11.45	8.103

The results show that total asset growth had a mean of 3.012 with a minimum of 3.165, a maximum of 7.211 and standard deviation of 1.268. This depicts that on average, the mutual funds had a positive total asset growth. Thus, on average, the fund portfolio's returns were not due to smart investment decisions but as a result of excess risk.

Interest rate had a mean of 21.220, minimum of 12.0, maximum of 34.02 and a standard deviation value of 7.527. Inflation rate had a mean of 8.801, minimum of 4.49, maximum of 11.71 and standard deviation value of 2.45. Total mutual funds returns had a mean of 9.046, minimum of 1.397 and maximum of 19.134.

4.3 Correlation Analysis

After the descriptive analysis, the study conducted Pearson correlation analysis to indicate a linear association between the predicted and explanatory variables or among the latter. It, thus, help in determining the strengths of association in the model, that is, which variable best explained the relationship between interest rates and financial

performance as measured total asset growth. It also helped in deciding which variable(s) to drop from the equation given low linear relationship or multicollinearity.

Table 4.3: Correlation Analysis

Variables	Total Asset Growth	Interest Rates	Inflation Rate	Total Funds Return	GDP Growth
Total Asset Growth	1				
Interest Rates	.593**	1			
Inflation Rate	.861*	-.235	1		
Total Funds Return	-.619*	-.404	.121	1	
GDP Growth Rate	.792*	.245	.311	.397	1

**. Correlation is significant at the 0.01 level (2-tailed); *. Correlation is significant at the 0.05 level (2-tailed).

From the Table 4.2, it can be deduced that there was a good, positive and significant correlation between total asset growth and Interest rates given correlation value (R) of 0.593 at $p < .001$. The results presents a good, positive and significant relationship between inflation rate and investment returns as measured by total asset growth ($R = 0.861$; $p = .023$). However, there was a good, significant but negative correlation between Total asset growth and Total funds return ($R = -.619$; $p = .032$).

4.4 Regression Analysis

The linear regression method used for this study was the least square method. This was used to determine the line of best fit for the model through minimizing the sum of squares of the distances from the points to the line of best fit. The regression analysis will utilize the following equation:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where, Y represent Total asset growth, X_1 represent interest rate, X_2 represent the inflation rate, X_3 represent the total funds return, X_4 represent the GDP growth rate, β_0 is regression constant, β_1 to β_4 are regression coefficients.

Table 4.4: Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.746[a]	.557	.516	.171263

a. Predictors: (Constant), Interest Rate, Inflation Rate, Total Funds Return, GDP Growth Rate
b. Dependent Variable: Total Asset Growth

The model goodness of fit statistics shows that the regression model was good owing to lack of serial autocorrelation as the Durbin Watson value was 2.081. This depict that there is no autocorrelation in the data. The model had a Correlation value of 0.746 which depicts good linear relationship between predicted and explanatory variables. The model was also moderately strong owing to R-square values of 0.557 which was adjusted for errors to 0.516. This depicts that the independent variables explains only 55.7% of the changes in financial performance as measured by Total asset growth.

Table 4.5: Analysis of Variance

	Sum of Squares	df	Mean Square	F	Sig.
Regression	639.484	4	90.868	4.907	.011b
Residual	666.635	15	18.518		
Total	1306.119	19			

a. Predictors: (Constant), Interest rate, Inflation rate, Total Funds Return , GDP Growth Rate
b. Dependent Variable: Total asset growth

Table 4.4 shows that the model was significant owing to F-test value of 4.907 at significance value of 0.011 ($p < .05$). Belle (2008) stated that insignificant F-significance indicates weak regression model as means of the groups (independent and dependent variables) are equal. Thus, the study's regression model was good.

Table 4.6: Regression Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.1081	0.701		1.803	0.078
Interest rates	0.0720	.951	0.054	3.762	.014
Inflation rate	0.3103	.218	0.265	3.628	.026
Total Funds Return	1.044	.503	0.921	3.429	.019
GDP Growth Rate	0.327	.684	.236	3.401	.002

a. Dependent Variable: Total asset growth

From the Table above, the following regression equation was established:

Sharpe = 1.1081 + 0.0720*Interest Rates + 0.3103*Inflation Rate + 1.044*Funds Return Rate + 0.327*GDP Growth Rate p = .011

From the model, when other factors (interest rates, inflation rate, total funds return, GDP growth rate) are at zero, the Total asset growth will be 1.1081. Holding interest rates, inflation rate and GDP growth rate constant, a unit increase in total funds return would lead to 1.044 increase in collective investment schemes growth.

Holding other factors (inflation rate, total funds return, GDP growth rate) constant, a unit increase in interest rates would lead to a 0.0720 increase in total asset growth. Furthermore, holding interest rates, total funds return, GDP growth rate constant, a unit increase in inflation rate would lead to a 0.3103 increase in collective investment schemes' total asset growth. Moreover, holding interest rates, inflation rate, total funds return constant, a unit increase in GDP growth rate would lead to a 0.327 increase in total asset growth

Table 4.7: Collinearity Statistics

Variable	Tolerance	VIF
Interest rates	.674	1.484
Inflation rate	.768	1.302
Total Funds Return	.862	1.160
GDP Growth Rate	.956	1.046

Variance Inflation Factors (VIF) shows that there is lack of collinearity amongst the independent variables as the VIF values were below the critical value of 10: interest rates (1.484), inflation rate (1.302), total funds return (1.160) and GDP growth rate (1.046). As

stated by Studenmund (2006), the variance (the square of the estimate's standard deviation) of an estimated regression coefficient is increased because of collinearity. This depicts lack of collinearity problems in the model.

4.5 Summary and Interpretation of Findings

Total asset growth was used to measure the excess return (or risk premium) per unit of deviation in an investment asset or a trading strategy, typically referred to as risk. The study established returns as high as 2.21 and high standard deviation of 1.26 compared to a mean of -0.012. Through the data analysis, it is apparent that mutual funds perform differently due to an array of diverse reasons. Some years accommodate positive performance while others encompass significant risk levels. The higher a fund's total asset growth, the better its returns have been relative to the amount of investment risk it has taken. The higher a fund's standard deviation, the higher the fund's returns need to be to earn a high total asset growth. Conversely, funds with lower standard deviations can sport a higher total asset growth if they have consistently decent returns. However, even though a higher total asset growth indicates a better historical risk-adjusted performance, this doesn't necessarily translate to a lower-volatility fund; fund's risk/return relationship is more proportional or optimal. The high Total asset growth depicted the funds better risk-adjusted performance.

The established negative total asset growth indicates that a risk-less asset would perform better than the mutual funds. According to the regression analysis above, money market funds are the most responsive to changes in interest rate. Since money market funds accommodate cross-sectional investors, they receive the most interest rate. Moreover, the

other mutual funds require significant investments that require direct bank deposits as opposed to interest rate transfers. In Kenya, interest rates have a limit of Ksh. 70,000 hence lock out numerous investors who wish to deposit significant funds to their desired companies. As this is not enough, interest rates are a recent development in this part of sub-Saharan Africa. Unlike western nations, or Europe countries, Kenya envisaged money transfers through mobile phones in 2008 through M-pesa.

Although the country is developing towards the desired direction, the technology is new to the entire populace. In the same period, the world was facing grave afflictions from the 2008 Global Financial Crisis. After the devastating global effects, 2011 gave rise to yet another atrocity dubbed the European Financial Crisis. This implies that the global arena has not been conducive for local, regional, and global investors. However, through the money market regression analysis from all companies, it is evident that the country is warming up to interest rate transfers that will redesign mutual funds financial performance in the future.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents summary of the main findings and conclusions based on research conducted. The purpose of these conclusions is to address the research objectives. After addressing each research objective, the recommendations will suggest the relevant actions to resolve all the addressed issues.

5.2 Summary of Findings

Similar to other studies, this research has unveiled a formidable relationship between interest rates and the financial performance of mutual funds. Through the data analysis section, it is apparent that money market funds receive the most interest rates than any other mutual funds. While money market funds accommodate all investors, other funds require significant investments that require direct deposits since the interest rates cannot handle such amounts. However, the research notes that the country is responsive to the technology and indicates a looming overhaul in the financial performance of mutual funds in the coming days.

One of the important findings of this study is that fund size is positively associated with higher performance. Larger funds (as shown by the invested amount) perform better suggesting the presence of significant economies of scale in the mutual fund industry. This finding is consistent among funds. Inflation rate is positively related with fund performance indicating that higher rate tend to lead to better performance.

Investors derive a lot of benefits from collective investment schemes including: deepening of the capital market, bringing capital market activities to the grassroots, helps to pool funds from various investors for investment purposes, encourages small private enterprises to take advantage of capital market funds for long-term investment purposes, which is necessary for the expansion of their businesses and subsequently the economy, and avails retail investors with professional management for their Funds.

Collective investment schemes work on the principle that spreading your investments over a range of products will protect the investors' money better than placing it all in one area of the financial market. Whereas this would cost a great deal of money if one were investing as an individual, the CIS is able to spread the investments by pooling investors' money. The level of diversification may vary between fund investment objectives. CIS are seen as medium to long-term investments, so investors should not expect to make a profit in the short term. All investments in securities, including CIS, run the risk that the markets may collapse and that investors may lose money.

5.3 Conclusion

Interest rates and inflation play a major role in the pricing of securities and the allocation of capital by businesses and investors. This applies to both debt and equity capital and is therefore of utmost importance to investors. Inflation risk is the danger that an increase in price levels will undermine the purchasing power of mutual funds returns. Investors often are attracted to CIS because of their regular payouts from interest earnings. These payouts, however, can be subject to inflation risk. Inflation erodes the purchasing power of any investment. It is particularly worrisome for investments that pay out a fixed stream

of interest over a period of time, such as bonds or certificates of deposits. As inflation increases the prices of goods and services, investors find that their interest earnings are not keeping pace. As an investor, you need to understand this role. Asset managers in Kenya control Fund into which small sums of monies from individual investors are collected to form a "pool" for the purpose of investing in stocks, shares and money market instrument. By investing in a unit trust scheme, the unit holders enjoy the benefits of diversification and professional management of their fund at low cost leading to growth of such schemes.

Collective investment schemes are one of the most highly growing products in financial services market. Collective investment schemes are suitable for all types of investors from risk adverse to risk bearer. Collective investment schemes have many options of return, risk free return, constant return, market associated return. Interest rates play a significant role in determining the financial performance of collective investment schemes. The investment is a spread over a range of options in order to diversify and spread risk. Each of the clients of the asset managers own a portion of the investment portfolio of the fund of their choice, indicating where his/her shares have been invested.

In Kenya, money market funds accommodate cross-sectional investors; hence, they are affected much by interest rate and inflation. Moreover, the other collective investment schemes require significant investments that require direct bank deposits. Interest rates in Kenya are high hence lock out numerous investors who wish to borrow money and increase cost of doing business leaving little for investment. However, owing to the growth of collective investment schemes, there is a conducive environment to for investment growth.

The primary factor affecting collective investment schemes performance is the change in the value of its holdings. In general, share prices rise when the market is up, and collective investment schemes follow. Since the fund is diversified through many investments (in some cases, more than 100), fund shares aren't as volatile as the prices of individual stocks. If the fund manager has selected his investments carefully, the fund should beat the market averages — although most stock funds, in fact, do not. Cautious fund managers who park a higher percentage of their assets in cash offer a less risky environment for investors; for that reason, it's good to know the cash ratio of any collective investment schemes you are researching.

5.4 Recommendations

It is vital for CMA to lobby for increased amounts through interest rates. Such a change will go a long way in convincing investors in other funds to use M-pesa among other mobile platforms in the country. The amendment will resolve the current problem that ails other collective investment schemes hence ensure that technology plays a focal role in determining their performance. Through the ever-dynamic technological advancements, users will have to adjust to a condition, which requires ample time to unravel. Kenyan mobile phone users are yet to clock half the country's population. As the government continues to combat mass poverty among other inhibitions, collective investment schemes operators have to demystify mobile phone usage in the country. After amending the current legislation curtailing interest rate transfers, and sensitizing the Kenyan population on advantages of adopting technology, collective investment schemes will experienced a drastic change in terms of performance.

Besides, collective investment schemes is subject to market risk, analyzing particular fund required study of the historical return of funds, risk measurement ratios to evaluate fund. Besides, for high return investors need to invest in diversified funds as different types of funds performed differently. For moderate risk and return, investors should invest in balance funds, for assure return invest in debt and liquid funds.

The CIS investor is dependent on the expert judgement of the portfolio manager, and there may be cases where the fund manager does not live up to expectations. Due to volatile market circumstances over the past decade the performance of many CIS has been disappointing, particularly in the equity sectors. In some cases there has been no capital growth at all, in other words, the CIS has not made a profit, which means that the investors have lost money. A CIS that is heavily slanted towards one sector may be negatively affected by economic changes in that sector. CIS charges have been deregulated and costs may differ from one scheme or manager to another. Schemes have become increasingly specialized in terms of their mandates and sophisticated in respect of the investment instruments used. Investors should therefore take great care that the profile of the CIS meets their needs and risk profile.

5.4 Limitation of the Study

The first limitation encountered was time constraint, the period from the data collection to finalizing the document was short and though all analysis was done further angles would have been explored in the study. The study would have benefited from an extended period of time from which extensive data would have been collected. Besides, Data availability is another inalienable limitation inherent in the Kenyan market

especially parsimonious information in financial sector. Asset managers feared disclosing delicate information hence curtailed/limited the quality and quality of the research findings.

Secondary data was collected from the firm financial reports. Thus, the study was limited to the degree of precision/accuracy of the data obtained from the secondary source. While the data was verifiable since it came from the CMA publications, it nonetheless could still be prone to these shortcomings. In attaining its objective the study was limited to the 16 asset managers. This owes to the fact that the growth of the CIS in Kenya is still at its nascent stage. Pension funds or retirement benefits were excluded while their operation is similar to some extent by CIS operations. The study could not, therefore, incorporate the macro-economic factors influence on their growth.

Besides, market risk to the mutual funds returns might be linked to world events. Thus, the interdependence negates the wisdom in limiting the factors affecting mutual funds' financial performance only to Kenya's macroeconomic variables. For example, rising oil prices and terrorism might make investors more pessimistic about the near term future thus affect returns to the mutual funds. If the fund is concentrated in a single sector, the performance of stocks in this particular family, and specific economic factors, are the main drivers on fund price. Funds that hold foreign stocks, for example, will improve when the dollar weakens, simply because overseas shares become more valuable.

5.6 Suggestion for Further Research

The study suggests that future studies might benefit at looking at how other investment instruments growth such as bond, Treasury Bills, are affected by interest rate and

inflation. Future studies on the same can also be extended to include other pension funds. Pension funds serve different market segment and might have different factors affecting their growth. In addition, future studies on the same can look at other macroeconomic aggregates such as stock market. This owes to the fact that, investment instruments might have different relationship with interest rate and inflation.

Future studies on the effect of interest rate and inflation on CIS growth using primary data. This would be helpful in capturing the qualitative aspects of the relationship between the two variables. These studies can also seek the opinion of the customers on CIS growth. This would help eliminate the bias of secondary data as some financial statement items are either overvalued or undervalued to escape statutory obligations such as payment of taxes.

The study suggests that future studies can be done over an extended period of time. This would enable collection of extensive data that would capture a wide variety of variables that are ancillary to CIS growth that would help isolate the associative effect of interest rate and inflation on the same. Future studies can also consider taking an extended period beyond five years. By doing so, the study can look at periods of infancy to the current stage of growth. This would help form a longitudinal kind of analysis of the asset managers which would strengthen the study.

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APPENDICES

Appendix 1: Data Collection Form

Data	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Total asset										
Interest rate										
Inflation										
GDP growth										
Total Funds Returns										
Comments										

Appendix II: List of Collective Investment Scheme Providers in Kenya

No	CIS Provider
1	African Alliance Kenya Unit Trust Scheme
2	Old Mutual Unit Trust Scheme
3	British-American Unit Trust Scheme
4	Stanbic Unit Trust Scheme
5	Commercial Bank of Africa Unit Trust Scheme
6	Zimele Unit Trust Scheme
7	Suntra Unit Trust Scheme
8	ICEA Unit Trust Scheme
9	Standard Investment Trust Funds
10	CIC Unit Trust Scheme
11	Madison Asset Unit Trust Funds
12	Dyer and Blair Unit Trust Scheme
13	Amana Unit Trust Funds Scheme
14	CFC Unit Trust Fund
15	Diaspora Unit Trust Scheme
16	First Ethical Opportunities Fund